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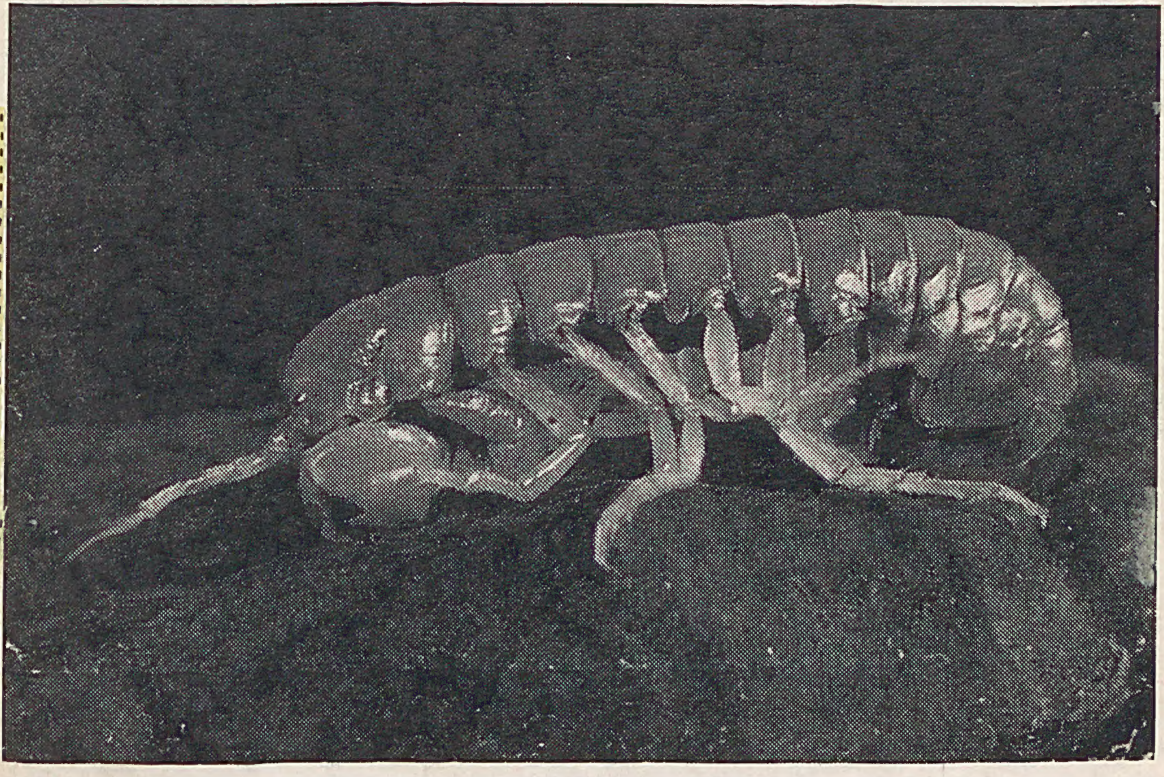

PHREATOICOPSIS

Hon. Editor: Trevor Pescott

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CONTENTS

Page

Editorial 1
Boobies Found Nesting in Port Phillip Bay
By Jack Wheeler. 2
Phreatoicopsis - The White Shrimp of the Grampians
By Ian McCann 5
Notes on the Grampian's Flora - Part 2.
By Alan Lonsdale & Geoff Carr. 7
"Cuckoos and Their Kin"
By Ellen McCulloch 22
"The Bird Bath"
By Oonah McHaffie 26
At Random 28
Junior Pages 31

The Statements and the opinions contained in the papers published in this Journal are the responsibility of the respective authors.

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COVER PHOTOGRAPH:

Phreatoicopsis from the Grampians
by Ian McCann.

GEELONG NATURALIST

Vol.5. No.1. April 1968.

EDITORIAL

In the "Junior Pages" of this issue is a sketch of a honeyeater feeder suitable for installation in any suburban garden; I hope that many will be built, for now is an ideal time to assist feeding of these nomadic birds.

Next to my home are several Tuart gums now in flower, and these provide a source of food for a swarm of Honeyeaters and some Lorikeets; most of these are nomads that follow the flow of honey, and in times of drought suffer along with most other wildlife. Feeding assistance for birds, and a source of water, is always welcome, and the reward for a little work in building a feeder and keeping it and the water bowl filled is to have the garden alive with our most vivaceous group of birds, the honeyeaters.

Although drought causes extreme hardship for individual birds and animals, nature has a way of balancing - given, of course, there are reserves left to form a basic stock. Probably no species is seriously endangered as a whole by drought, but we must have sufficient habitat remaining for the birds and animals to survive. The drought will not cause extermination of a species in itself - but man's carelessness in destroying habitat, his wanton destruction of vegetation, swamp and land, too often leaves insufficient area of suitable habitat for birds and animals to recover from any serious disaster, be it fire, drought, or disease.

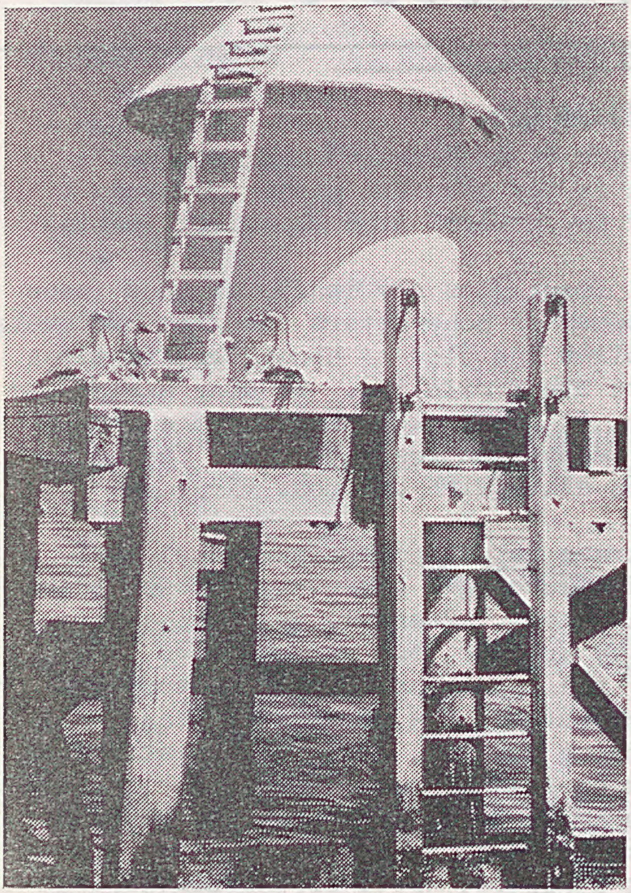
Mr Wheeler in his President's Report, wrote of the Lowans or Mallee Fowl at Kiata starving; the problem is that the 700acres reserve is too small for a bird of this type - the drought reduces food and water available, but it is man's failure to provide sufficient area for the birds to wander at this time that is producing the hardships. On many occasions, we plead for areas of land to be preserved as habitat, but the ultimate decision is often beyond our control. In a small way, however, we can do a little by building water and feeding places for our nomadic bush birds; they have an advantage over the Mallee fowl by having air space in which to move - but no matter how far they move, they still must reach a destination where food exists.

Could this be your garden?

TREVOR PESCOTT,
Hon. Editor.

BOOBIES FOUND BREEDING IN PORT PHILLIP BAY

By Jack Wheeler, Belmont



Pile Light in West Channel.
Photo by Jack Wheeler.

"Gannets known as boobies to sailors, occur on most of the high seas. They are powerful fliers and expert divers. To breed, they prefer seclusion on remote islands, many of which are mostly inaccessible. Strange as it may seem, a small group of boobies have now broken this tradition by establishing a breeding colony on a pile-light close to habitation and in the heart of a busy shipping channel."

Less than two years ago, late in 1966, Ned Stonehouse, on the staff of the Ports and Harbours at Queenscliff, reported that a handful of Australian gannets had nested on the wooden platform of a channel pile-light. His letter to a prominent naturalist was ignored. Later, Ned contacted me, and I promptly discussed this strange behaviour with him. I learnt that three nests had been noticed but only one chick had been successfully reared. It was early in December 1966, that the first and only egg was laid.

During his tour of duty in servicing the channel lights, Ned watched with interest, particularly the arrival of the first chick which is probably the first gannet ever hatched in Port Phillip Bay. After a few weeks, the chick grew into a healthy and robust bird, living on a diet of pilchard and squid. By mid-February, the youngster had become fully-fledged and was master of the air, just as its older parents.

BOOBIES FOUND BREEDING IN PORT PHILLIP BAY (Cont'd.)

I discussed this with other naturalists, and some even doubted the observation, and passed it off as being a cormorant, but definitely not a gannet. Ned had spent much of his life at sea, particularly around the many islands of Tasmania, and apart from knowing these golden-headed birds, had seen many hundreds of them nesting on the Black Pyramid off Stanley, in Bass Strait.

I felt sure that Ned had not made any mistake, so we waited for the nest season with considerable interest - would this handful of gannets repeat their breeding routine of 1966? Ned felt confident that they would, as during the winter when on his rounds, they were always in the vicinity of this particular light. Sure enough, on 23rd August of 1967, fresh dry sea-weed was noticed on the platform, and odd birds noted carrying nesting material.

Ned Stonehouse & Geoff Vincent examining a young gannet.
Photo. by Jack Wheeler.

On 14th September, there were two nests roughly put together with masses of sea-weed and guano, and one contained what appeared to be quite a fresh egg. By late in November the nests had increased to six and the first chick had hatched. I was not able to visit this rookery until 8th January. It was a perfect day, with a calm sea. I wanted to confirm Ned's discovery and I wanted to land on

BOOBIES FOUND BREEDING IN PORT PHILLIP BAY (Cont'd.)

the pile-light to photograph the young and also to band them. To assist with the banding, Geoff Vincent accompanied me.

Approaching the pile, I counted eleven adults, all in breeding plumage, their rich golden heads adding to their beauty and giving them that elegant appearance. We circled the light before coming in to land and it was not until then that the adults took off, and we could then clearly see the chicks herded close to the base of the light structure. The wooden platform constructed on tall piles, measured about 25' by 15'. In all there were ten nests. Four contained single eggs, one a very freshly hatched chick, and two, downey chicks. One downey chick had left the nest and another was close reaching the fully fledged state. Four chicks were banded. My second visit was made on the 14th February, when three further chicks were banded, and one nest contained a single egg still being incubated. Little remained of the other nests which were there on the previous visit.

To our knowledge, seven young were reared this season. Now we are anxiously waiting to see what will happen in future seasons. At the most this platform could only take twenty five nests. What will happen when this state is reached. Already birds have been noticed depositing sea-weed material on another pile-light, as if for breeding.

Perhaps in a matter of a few years, we will have a series of gannet rookeries along our various shipping lanes in Port Phillip Bay- who knows?

We are extremely grateful to Ned Stonehouse for his interest in these gannets and also to the Ports and Harbours for arranging transport.

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Editor's note: Those fortunate enough to be present on the Bird Observers Club boat trip on March 24th saw the nesting sight, with one large young still present.

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PHREATOICOPSIS - THE WHITE SHRIMP OF THE GRAMPIANS

By Ian McCann, Stawell

There are far more interesting and remarkable things on Mount William in the Grampians than the tall pylons and other structures of the Department of Civil Aviation.

Many of the trees and shrubs and some of the herbs to be found in the shallow gullies and rock crevices on this great rounded mass of sandstone are endemic species; they do not occur naturally anywhere in the world outside the Grampians region.

Some of the stunted eucalypts are Grampians Gums which are restricted to this region. Early each Summer the sturdy shrubs bud and bloom. Then may be seen masses of colorful flowers, the rich mauve of the Rosy Bush-pea, the bright yellow of the Mountain Parrot-pea, and the creamy white of a long-leaved Beard-heath. All are endemics. The small, pincushion-like rosettes of the Bristly Trigger-plant are common and will produce their quaint flowers with sensitive columns around Christmas. This too is confined to the Grampians.

Sometimes, especially after heavy rain-storms, the skeletons of a strange, leggy crustacean may be found. This is the creature known as Phreatoicopsis terricola. (Phreatoicopsis is pronounced "free-a-toe-i-copsis".) It has been called by one writer "the White Shrimp", but it is not a shrimp. Its nearest relatives are the "slaters" and "pill bugs" which we find in our gardens.

Phreatoicopsis terricola is the largest of the phreatoicids growing to a length of about two inches. It is usually light grey to white with some yellow on the front of the head and on the edges of the body segments. It has a pair of feelers, a pair of poorly developed eyes, and seven pairs of walking legs. The legs of the first pair are the largest and their last segment consists of a movable claw which can be folded back on to the next segment which is greatly enlarged. The rearmost three pairs of legs are opposed to the others. The abdomen or tail looks something like that of a yabbie but is rounder in cross section. Like the yabbie it flaps this tail vigorously when disturbed.

PHREATOICOPSIS - THE WHITE SHRIMP OF THE GRAMPIANS (Cont'd.)

It is an extrmely awkward creature. It cannot swim and, when it crawls, spends most of the time falling over and righting itself.

Terricola, its specific name, means "living in the ground" and this describes its habits very well although it has been found in streams also. On the mountains it favours shallow tunnels which it excavates under rocks and in moss beds; but in the valleys it occupies "crab holes" which may be several feet deep. My experience is that it can survive quite well without water. I have found it in dry moss, and under rocks in soil that was almost dry.

Phreatoicopsis is confined to the Grampians and parts of the Otways. Two other Grampians crustaceans also have extremely restricted distributions. The Spiny Crayfish which occurs in the Wannon and Glenelg rivers is not found away from this river system, and a steel-blue to brown "yabbie", on which the movable claw of the pincer is sickle-shaped, is also confined to streams which rise in the Grampians.

Phreatoicopsis is of interest for yet another reason. Fossils of an almost identical species have been found in the Triassic beds in New South Wales. To remain practically unchanged in this changing world for 175,000,000 years is no mean achievement. It was digging its tunnels and flapping about in the streams about the time that a branch of the reptile stock began to develop the characteristics which resulted in the evolution of the now dominant mammals. It existed for millions of years before there were any birds or flowering plants.

Phreatoicopsis was well over 170 million years old before ancestral man fashioned his first tool and crouched over his first camp fire.

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Articles and photographs are always needed by the Hon. Editor to fill future issues of "Geelong Naturalist".

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NOTES ON THE GRAMPIAN'S FLORA - PART 2

By Alan Lonsdale & Geoff Carr

Phebalium bilobum, Mt. William.
Photo by Alan Lonsdale.

WONDERLAND.

The name Wonderland is by no means a misnomer as members found when they visited the area on Saturday afternoon. Botanically it was the most interesting place we visited and is the equal of any in the Grampians for variety of plants, landscape and rock formations. We could have spent much more time in the locality.

The lookout at the top of Wonderland known as The Pinnacle is reached from the car park by means of a tourist track which is well posted with the names of various landmarks and provided with iron steps and railing to make the going easier. This track is constantly interesting and varied and keeps the company of ravines, canyons, caves and a waterfall which had by this stage ceased to flow. At the Pinnacle a magnificent view is obtained of the various ranges and peaks to the north, south, east and west with Lake

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Bellfield and Hall's Gap almost below the viewer's feet.

Just beyond the car park the track bridges the very picturesque Rocky Creek and then follows up a ravine through which a small stream runs. In this vicinity many beautiful and interesting plants were noted.

Astroloma pinifolium, Pine Heath is a sprawling shrub with light green "needle" leaves and slender yellow and green tubular flowers. The edible fruits are relished by emus. It is worthy of admiration by virtue of its foliage alone and is common in the Grampians.

Caladenia carnea, Pink Fingers is a well known orchid of which a few specimens were seen along the track.

Calytrix sullivanii, Grampians Fringe-myrtle. This endemic plant is named after an energetic plant collector who did much work in the Grampians. The masses of white to pale pink flowers provide colour over a wide area and are one of the beauties of the Grampians.

Cladia retipora, Coral Lichen. Some members found specimens of this common but beautiful lichen under shrubs about half way along the track.

Comesperma volubile, Love Creeper. Few climbers have the charm of this plant which was noted along the track in several places. The small flowers are massed along slender stems and are blue.

Correa aemula, Hairy Correa is a common plant in the Grampians where it is at its best along the streams. The attractive hairy leaves are oval shaped and the translucent green bell flowers are often marked with purple. It is confined in Victoria to the south west.

Dillwynia oreadoxa, Parrot-pea is an endemic species with large clear golden flowers in clusters. It was flowering well along much of the track.

Eucalyptus alpina, Grampians Gum. As the common name suggests, this tree is found nowhere else and it was first discovered by Major

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Mitchell on Mt. William. It is only found in the higher parts of the ranges and on the very summits only attains a dwarf stature. Some specimens were in flower, an occurence which is seldom observed because of the plant's irregularity in blooming. The flowers are white.

Euphrasia collina, Purple Eyebright is a low perennial which grows in sheltered spots. We observed a number of specimens in the higher parts in the protection of rock. The beautiful mauve white and yellow flowers are borne along the erect stems. The genus is said to be parasitic on the roots of other plants.

Gahnia clarkei, Giant Saw-sedge. This massive plant grows up to fifteen feet and has claim to fame as being the largest sedge in the world. It is an impressive plant and can be seen to advantage along the streams of Wonderland and wherever else there is an abundance of moisture.

Hakea sericea, Silky Hakea. In bloom the Silky Hakea is a beautiful plant and it is now quite common in gardens. The species is common in the lower part of Wonderland where it was flowering well. The leaves are slender, rigid and needle sharp.

Helichrysum baxteri, White Everlasting is one of several white everlastings which make a show in the Grampians. This species is a low perennial which is common on lighter soils.

Humea elegans, Plume Humea. This is a huge biennial attaining a height of up to fifteen feet which bears large plumes of red or bronzy pendant heads in summer. We incidentally have not seen the plant in bloom but several small specimens were seen in the ravine near the start of the track. The foliage is large and luxuriant looking and pleasantly aromatic. It is a member of the daisy family and has recently been given an entirely new name. "Humea" is now obsolete for this plant.

Leptospermum nitidum, Shining Tea-tree. Probably no tea-tree has larger flowers than this handsome species which is found in the Grampians and Tasmania. The deep green shiny foliage is reddish when young and the flowers are pure white and produced in abundance.

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

It can be seen in most parts of the Grampians clinging often in the highest and most exposed situations where existence seems impossible.

Marianthus bignoniaceus, Orange Bell-climber. The only Victorian occurrence of this beautiful climber is the Grampians but it is also found in South Australia. It is a common plant, mainly along streams where it often becomes very dense. The plants we saw along the track were flowering well, the dainty orange bells hanging along the tough stems.

Pimelea spathulata, Nodding Rice-flower. In the vicinity of the waterfall this small shrub was flowering abundantly, and it was conspicuous along the track by its clusters of pendant creamy flowers

Pultenaea scabra and Pultenaea costata. The Rough and Ribbed Bush-peas respectively. The latter species is endemic. These shrubs provided much colour along the middle part of the track. Both species have yellow and orange flowers in profusion.

Stylidium solobiferum, Grampians or Bristly Trigger-plant. As the common name implies this small plant is found nowhere else. The plants consist of colonies of dense many leaved rosettes. Each leaf is narrow and fleshy (to withstand the summer drought) and ends in a fine bristle. On the Major Mitchell Plateau these plants carpet many square yards. The small white, crimson backed flowers are borne on branched slender stems and each possess the usual trigger mechanism. The plants grow often in soaks which dry out in summer. It was in good flower when we saw it. The plant is unique because it is the only eastern representative of the essentially western group of rosetted trigger plants.

Thelymitra antennifera, Rabbit Ears is a beautiful clear yellow orchid which expands only in warm sun. We saw a few specimens in the soaks along the track. Another species, the

Salmon Sun-orchid , T. rubra which has smaller pink flowers was also noted. In similar situation (the soaks) the rare yellow form of the Salmon Sun-orchid can be found, though none were evident this time.

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Todea barbata, King Fern. This is another huge plant of the water courses and good specimens can be seen in the first ravine where the plants were named. The fronds of this magnificent fern can be as much as ten feet long, but the trunk is only short.

Utricularia dichotoma, Fairies' Aprons. The bladder-worts are very interesting aquatic herbs which are noted for their "animalcule" catching ability. Small water organisms are caught in tiny traps on the roots of the plant. The rosette of leaves is very small and is often submerged, and from this rises a slender stem about six inches high bearing several mauve flowers with a large apron. Each apron has a yellow dot in the centre. Occasionally pure white flowers are found and in a good season the Fairies' Aprons grace the Grampians soaks in thousands.

We found the species on the margins of Rocky Creek and higher up towards the Pinnacle where they occupy the mossy slopes which run with water in winter and spring.

WONDERLAND - PLANT LIST:

Acacia mitchellii	Mitchell Wattle
Acacia mucronata	Variable Swallow-wattle
Acacia myrtifolia	Myrtle Wattle
Acacia oxycedrus	Spike Wattle
Acrotriche serrulata	Honey-pots
Asplenium flabellifolium	Necklace Fern
Astroloma pinifolium	Pine Heath
Banksia marginata	Silver Banksia
Billardiera scandens	Common Apple-berry
Bulbine bulbosa	Bulbine Lily
Burchardia Umbellata	Milkmaids
Calytrix sullivanii	Grampians Fringe-myrtle
Cladia retipora	Coral Lichen
Comesperma volubile	Love Creeper
Correa aemula	Hairy Correa
Dianella revoluta	Black-anther Flax-lily
Dichopogon strictus	Chocolate Lily
Dillwynia oreodoxa	Parrot-pea
Dodonea cuneata	Giant Hop Bush

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Eucalyptus alpina	Grampians Gum
Euphrasia collina	Purple Eyebright
Gahnia clarkei	Giant Saw-sedge
Goodenia geniculata	Bent Goodenia
Goodenia ovata	Hop Goodenia
Grevillea aquifolium	Prickly Grevillea
Hakea rostrata	Beaked Hakea
Hakea sericea	Silky Hakea
Helichrysum baxteri	White Everlasting
Helichrysum obcordatum	Grey Everlasting
Hovea heterophylla	Common Hovea
Humea elegans	Plume Humea
Leptospermum juniperinum	Manuka
Leptospermum nitidum	Shining Tea-tree
Leucopogon thymifolius	Thyme Beard-heath
Marianthus bignoniaceus	Orange Bell-climber
Melaleuca decussata	Totem-poles
Melaleuca squarrosa	Scented Paper-bark
Olearia ramulosa	Twiggy Daisy-bush
Persoonia juniperina	Prickly Geebung
Phebalium bilobum	Truncate Phebalium
Pimelia spathulata	Nodding Rice-flower
Prostanthera lasianthos	Christmas Bush
Pultenaea angustifolia	Narrow-leaf Bush-pea
Pultenaea costata	Ribbed Bush-pea
Pultengea scabra	Rough Bush-pea
Stackhousia viminea	Slender Stackhousia
Stylidium solabiferum	Bristly Trigger-plant
Stypandra glauca	Nodding Blue-lily
Styphelia adscendens	Golden Heath
Tetratheca ciliata	Black Eyed Susan
Todea barbata	King Fern
Utricularia dichotoma	Fairies' Aprons
Veronica gracilis	Slender Speedwell

Caladenia angustata	Musky Caladenia
Caladenia carnea	Pink Fingers
Pterostylis longifolia	Tall Greenhood
Pterostylis parviflora	Tiny Greenhood

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Thelymitra antennifera	Rabbit Ears
Thelymitra aristata	Scented Sun-orchid
Thelymitra pauciflora	Common Sun-orchid
Thelymitra rubra	Salmon Sun-orchid

VICTORIA VALLEY.

On Sunday morning a few of the more enthusiastic members indulged in a before breakfast jaunt to the Victoria Valley to inspect an area known to contain the Purple Diuris, Diuris punctata.

This orchid has a special attraction because of its colour and size, and is recognised as being one of the largest and finest orchids we have. It is now quite rare.

A week earlier the orchids had not been out but plenty of buds were evident. Our later inspection proved worthwhile, nearly all buds being open, though the blooms were considerably poorer than the previous year because of the dryness. We saw only one pool of water aside from a man made channel, whereas last year the whole of the Victoria Valley seemed unindated, there being surface water everywhere.

Other orchids seen included the Musky Caladenia, Caladenia angustata which is a particularly fine form here. The petals and sepals are often backed with a deep purple-maroon colour the likes of which we have not seen elsewhere. This colour often extends onto the upper surface of the floral segments, making the flower considerably more attractive. It is plentiful here as is the Rabbit Ears, Thelymitra antennifera, and the Common Sun-orchid, T. pauciflora. Onion orchids are also numerous. A week earlier we had observed the pollenation of the Common Sun-orchid by a small native bee.

Other plants of note in the Victoria Valley were Bulbine bulbosa the Bulbine Lily which spreads veneers of yellow under the Red Gums in the more open places, and the pink Grass Trigger-plant, Stylidium graminifolium. Also the beautiful mauve-purple Kunzea, K. paruifolia was seen in full bloom and a very large specimen of the Yellow Hakea, H. nodosa, which is not often observed.

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Podolepsis jaceoides the Showy Podolepsis made a fine show with its yellow-fringed heads.

The whole journey to and from the Victoria Valley was a procession of colour as plants lined the road; pea flowers were particularly evident. Each creek crossing was illuminated with Showy Bauera, B. sessiliflora, and Silky Tea-tree was everywhere conspicuous.

Common Heath, Mt. William.
Photo by Alan Lonsdale.

MT. WILLIAM.

At 3,829 feet Mt. William is the highest and also one of the most easterly points in the Grampians becoming sub-alpine on the summit where snow in winter is not rare.

In discovering the Grampians Major Mitchell did little to investigate the ranges themselves and only climbed several peaks including the

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

then unnamed Mt. William which impressed him as a point of observation. He ascended Mt. William with a handful of men and spent a night and the best part of the next day there in extremely adverse conditions. So cold and windy was it that the air was full of sleet in the night and the bushes were covered with icicles. The temperature was as low as 27°F at one stage and several of his men became ill through the effects of exposure which left them debilitated for the remainder of the expedition.

Major Mitchell's main aim in scaling Mt. William was to establish a trig. point on the summit from which he could do some surveying. This is why he decided to spend some part of the next day on the summit in spite of the ordeal of the previous night and the weather at that stage. The weather was not kind to him and cloud only permitted him to sight several prominences before he gave it away and descended to his camp near the foot of the mountain.

While on Mt. William Major Mitchell and his botanical collector managed to find about twenty new species of plants which were carefully preserved and later sent home to the eminent botanist Lindley in England who described and named the new species.

Because of its altitude Mt. William is of special interest in the Grampians and several plants grow nowhere in the ranges except on the Major Mitchell Plateau which is immediately to the south of Mt. William and almost as high. Such plants include the Mountain Caladenia on both, and, the Snow Daisy, Snow Gum and Mountain Pepper which are restricted to the Major Mitchell Plateau.

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The excursion to Mt. William on Sunday morning was enjoyed by everyone and there was an abundance of flowering plants to be seen.

The road to Mt. William is sealed to within about one mile of the summit and on the way up provides some fine sight seeing. The road was lined with the colour of many wildflowers. The slopes become rockier as the road climbs and Eucalypt forest and scrub gives away

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

to the smaller more stunted vegetation of the summit where trees are few. Some interesting areas of sloping swampy heath can be seen beside the road on the way up.

The last mile of road at the top is a rough hewn track strictly for four-wheel drive vehicles and foot walking. This track is badly eroded in places and serves primarily as access to the new transmitting station at the top which is somewhat of a blot on the landscape. We noticed with disgust that a lot of rubbish left over from building operations has been simply thrown over a small cliff as an easy means of disposal.

Some of the noteworthy plants included -

Banksia integrifolia, Coast Banksia. In the Grampians this beautiful small tree grows at an altitude of 2000 feet and over, which is thought to indicate the level of the great inland sea, as this is a coastal species. The Grampians occurrence is one of the rare inland localities where this species is known. It is abundant on Mt. William and Major Mitchell Plateau where some fine old lichen bedecked specimens exist often growing in the harshest situations. Because of their environment the plants are reduced in size and are rounded small trees.

Boronia pilosa, Hairy Boronia. One of the most conspicuous wildflower on the summit and upper slopes where it is nearly prostrate, often growing in the rockiest places. This is in marked contrast to specimens seen a week earlier in the swamps of the Victoria Valley where it grows as a slender erect shrub up to about four feet, amongst dense scrub. The flowers of these plants are fewer and larger.

On the peak it could be seen cascading pink everywhere often growing with Tetratheca and Guinea-flower which provided a pleasing sight.

Burchardia umbellata, Milkmaids. Everyone is familiar with this very common lily but its Mt. William occurrence is worthy of note as the plants here are only a few inches high because of the conditions. They grow in moist depressions on the Mount.

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Caladenia lyallii, Mountain Caladenia. This orchid is found in the Grampians only on the highest parts of Major Mitchell Plateau and Mt. William and this is the only occurrence in Western Victoria. In Eastern Victoria this orchid is found in alpine and sub-alpine regions usually above 4,500 feet. On Mt. William a number of good specimens were found. The flowers are pink and white. Another orchid in evidence was the Musky Caladenia, C. angustata which is very common in the Grampians.

Correa lawrenciana, Mountain Correa is another plant that is dwarfed by the conditions. In easy mountain forests the species is a small tree but here it grows to only about four feet. The form is a showy shrub with masses of yellow-green hairy bells and rusty stems. The leaves are deep green and quite ornamental.

Helichrysum apiculatum, Common Everlasting. Although a very common plant especially in Western Victoria this plant is worthy of note and the form found on Mt. William is especially attractive. Here it grows in the harshest places and is a low densely wooly white perennial with clusters of yellow-orange heads. Specimens observed by members of the party were not flowering well because of dryness.

Leucopogon neurophyllus and L. thymifolius, Beard heaths. Both these species were in ample numbers, especially the latter, which was described by Lindley from Major Mitchell's material. The species are apparently confined to the Grampians and both have small leaves with small white flowers nestling amongst them.

Olearia myrsinoides, Silky Daisy-bush. Mt. William is rich in daisy bushes and the Silky Daisy-bush is one of the most attractive species with leaves deep green above and white beneath. The heads are small with only a few ray florets or "petals" but a mass of these pure white flowers is very showy.

Phebalium bilobum, Truncate Phebalium. This shrub is abundant on the slopes of Mount William and was probably discovered by Major Mitchell as it was described by Lindley. The plant was in full

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

flower and was attractive with the masses of white pink-tinged flowers. The specific name alludes to the leaves which have two small lobes at the apex.

Pultenaea sub-alpina, Rosy Bush-pea. There is no finer pea plant in Victoria than this shrub which grows only on a few prominences in the Grampians among them Mt. William, Major Mitchell Plateau and Mt. Rosea which was named after the plant. Its former botanical name was Pultenaea rosea.

No other Victorian Pultenaea has such brilliant flowers and probably no other Eastern Australian species has either - most of them having yellow or orange flowers. There is a group of more colourful species in the West. The flowers of the Rosy Bush-pea are rich magenta pink and borne in clusters at the ends of the branches and each has a spot of yellow on the standard. The leaves are narrow and short but crowded.

Members were too early to fully appreciate the plants as the heads were just beginning to come out but their abundance gave promise of a fine show to come.

MT. WILLIAM - PLANT LIST:

Acacia oxycedrus	Spike Wattle
Amperea xiphoclada	Broom Spurge
Astroloma pinifolium	Pine Heath
Astrotricha ledifolia	Star Hair
Banksia integrifolia	Coast Banksia
Banksia marginata	Silver Banksia
Boronia nana	Waxy Boronia
Boronia pilosa	Hairy Boronia
Burchardia umbellata	Milkmaids
Conospermum mitchellii	Mountain Conosperm
Correa aemula	Hairy Correa
Correa lawrenciana	Mountain Correa
Cuscata melantha	Dodder
Dianella tasmanica	Tasman Flax-lily
Drosera auriculata	Errienellum

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Epacris impressa	Common Heath
Eucalyptus alpina	Grampians Gum
Euphrasia collina	Purple Eyebright
Gahnia radula	Thatch Saw-sedge
Grevillea aquifolium	Prickly Grevillea
Grevillea ilicifolia	Holly Grevillea
Helichrysum apiculatum	Common Everlasting
Helichrysum obcordatum	Grey Everlasting
Hibbertia fasciculata	Bundled Guinea-flower
Leptospermum juniperinum	Manuka
Leptospermum myrsinoides	Silky Tea-tree
Leptospermum nitidum	Shining Tea-tree
Leucopogon neurophyllus	Beard-heath
Leucopogon thymifolius	Thyme Beard-heath
Marianthus procumbens	White Marianth
Olearia myrsinoides	Silky Daisy-bush
Olearia ramulosa	Twiggy Daisy-bush
Phebalium bilobum	Truncate Phebalium
Pimelia spathulata	Nodding Rice-flower
Pteridium esculentum	Austral Bracken
Pultenaea angustifolia	Narrow Leaf Bush-pea
Pultenaea subalpina	Rosy Bush-pea
Stylidium graminifolium	Grass Trigger-plant
Stylidium solabiferum	Bristly Trigger-plant
Styphelia adscendens	Golden Heath
Tetratheca ciliata	Black Eyed Susan
Xanthorroea australis	Austral Grass-tree
Caladenia angustata	Musky Caladenia
Caladenia lyallii	Mountain Caladenia
Pterostylis longifolia	Tall Greenhood

SOME CONCLUDING COMMENTS.

From Mt. Abrupt, the southern extremity, to Mt. Zero at the northern end (a distance of fifty miles) the bush is pockmarked by numerous small burns, the result of the Forest Commissions' dubious "controlled burning". Indeed it may be interesting to learn the cause of the recent devastating fires in the Mounts Abrupt and

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

Sturgeon region. We cannot see much good in this indiscriminate burning to "reduce the quantity of inflammable material". We have it on good authority that in the North-east Victoria where "controlled burning" is practised that the hop-bushes regenerate in such profusion as to exclude much of the ground flora. This shrub is one of the most inflammable of all and the purpose would seem to be defeated.

The bush is burnt in Spring when there is such an abundance of flower and the main concentration of nesting occurs. Plants are prevented from seeding, and some birds must be destroyed at a time when they can least afford it. The fauna must suffer considerably and one wonders how many koalas like the one we admired along the Mount Zero Road are killed annually. Not only are animals killed but the shelter for hollow frequenting animals is probably destroyed to some extent, causing a reduction in recolonization. No one can dispute the absolute necessity of fire in the Australian bush; so many plants are dependant on it for their propogation. It can be overdone though. Too frequently fires upset the ecological relationships. Ligumes become dominant to the exclusion of lesser plants and the ground flora such as lilies and orchids. The change in plant life must in turn affect the fauna which is so dependant on it.

The Grampians should be left untouched as a unique national monument and living museum, but inroads are gradually being made on the bush. Large areas at Mount Zero have been cleared to enable olive planting, and pine plantations are becoming more common. It is likely that the olives will be spread into the Grampians by birds, and pine trees never restrict themselves to the plantation, infiltrating into the bush where they may successfully destroy the habitat.

Weeds are no less a problem and most of the creeks around Halls Gap have their fair share of blackberries. Logging operations which would seem to cause an excessive amount of destruction facilitate the spread of weeds as they gain a ready hold on the disturbed soil. Blackbirds are probably largely responsible for spreading some weeds, especially blackberry. Blackbirds have been heard singing

NOTES ON THE GRAMPIAN'S FLORA - PART 2 (Cont'd.)

in the most remote parts of the Grampians.

Pigs are wild in the Grampians as a walk along Fyans Creek evidenced. Deer were observed in the vicinity of Lake Bellfield, and in spite of their beauty they are destructive to ground flora mainly through trampling and the compacting of surface soil.

The Forest Commission is to be congratulated for its efforts in prominently labelling a number of trees in the vicinity of Lake Bellfield. An extension of these efforts is urged in the cause of general tourist education, and it would make, for many people, a visit to the Grampians more interesting and informative. An increased knowledge of our bushland leads to a greater interest in, and greater respect for it.

On the other hand it was disappointing to observe the large open spaces left as a result of the Lake Bellfield construction which are being planted with conifers and deciduous trees. Surely in a setting of potential beauty such as this it would be more appropriate to artistically plant indigenous trees which would merge with, and compliment the existing landscape. The area would be ideal for the development of plantings of trees and shrubs from many parts of Australia.

One cannot fail to be impressed by the beauty and grandeur of the Grampians, and, at the same time, by the inroads that man with his various activities is making on them. There is an urgent need to preserve the entire area as a National Park, so that future generations will beaable to enjoy this magnificent natural feature in its original, unspoiled state.

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Subscriptions are now due, and should be paid to the Hon. Treasurer as soon as possible. His address is shown inside the back cover of this issue.

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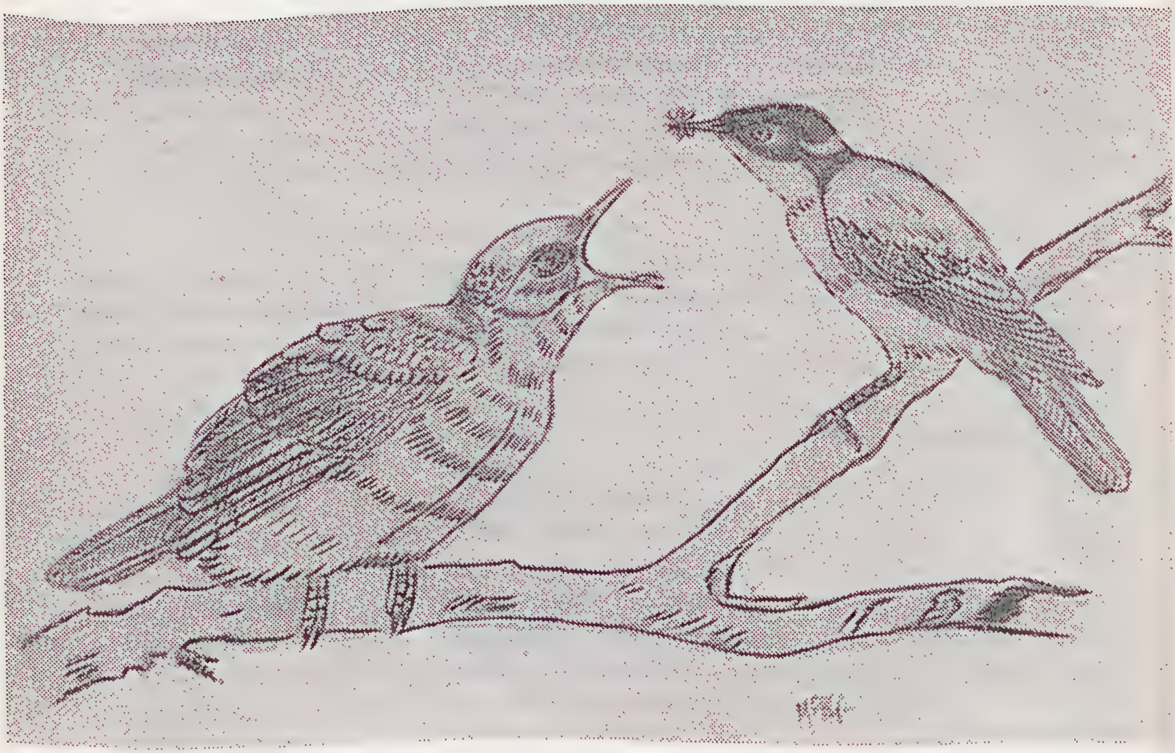
"CUCKOOS AND THEIR KIN."

By Ellen M. McCulloch, Mitcham



Cuckoo being fed by White-naped Honeyeater.
Drawing by Ellen McCulloch.

When I pointed out a Pallid Cuckoo plaintively calling from a suburban telephone wire, my friend asked with sudden interest "Is that the clever bird that doesn't bring up its own family?" The rather harassed mother of four healthy young children, my friend understandably had moments of complete sympathy with such behaviour.

Since very early days the habits of cuckoos have intrigued men, and there are frequent references to them in literature. Perhaps the best-known is found at the end of "Love's Labour Lost" -

"Cuckoo, cuckoo: O, word of fear,
Unpleasing to a married ear!"

So Shakespeare expressed the sentiment long-felt by disapproving

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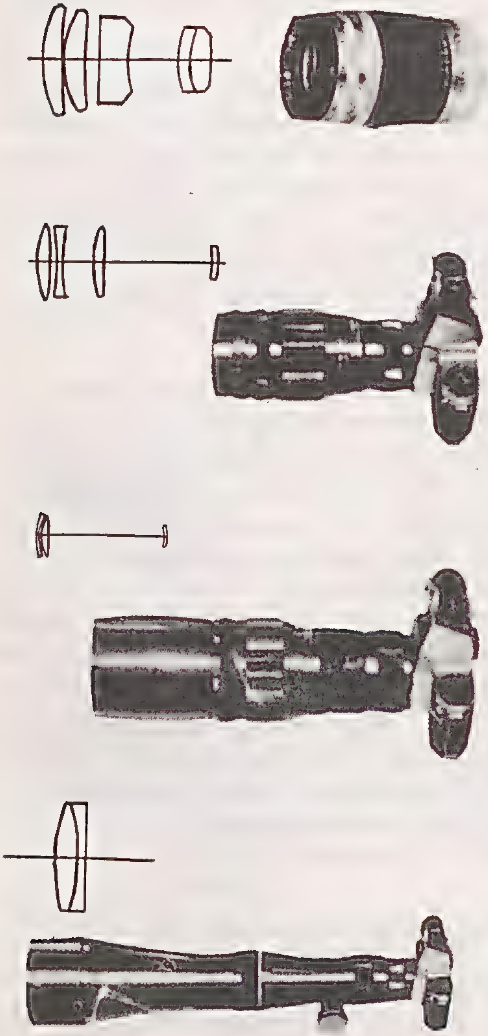

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"CUCKOOS AND THEIR KIN" (Cont'd.)

(perhaps envious) moralists towards these birds who so successfully shelve their parental responsibilities by laying their eggs in the nests of other birds.

To-day we no longer judge and interpret the action of other animals in terms of human emotions and mental processes. Nevertheless the new science of ethology - the scientific study of behaviour - reveals many more similarities between man and his forbears than most people are prepared to admit. One of the most eminent ethologists Professor William H. Thorpe of Cambridge University states that "there is hardly any aspect of the behaviour of animals which may not have some reference to problems in human behaviour".

While it is not suggested that we have evolved either directly or indirectly from a stone-age cuckoo, it is interesting to note that the idea of shelving parental responsibility is becoming more and more widely accepted in our own society, with an increasing number of creches and nurseries in use. Admittedly, we usually have to pay for this service in cold cash, while the cuckoo, arranging her affairs much more efficiently, gets off scot-free.

There are approximately one hundred and twenty-seven species in the family of cuckoo-like birds (cuculiformes), found throughout the warmer regions of the world; of these, only fifty or so are parisitic. The name "Cuckoo" is not applied to all species - there are for example the Road-Runners of southern North America, and Pheasant-Coucals, distributed from Africa through Asia to Australia.

It is not commonly known that birds completely unrelated to cuckoos also practise nest-parasitism. These include the Honey-Guides of Africa, the Cowbirds of America, a South American duck, and several species of small finch-like birds, the Weaver-Finches of Africa.

Australia has thirteen species of parasitic cuckoos and eight of these have been recorded in Victoria, two very rarely. All species normally migrate north during the winter, although occasional individuals remain, like silent eccentric hermits. When the birds first return in the spring to breed they are very

"CUCKOOS AND THEIR KIN" (Cont'd.)

noisy, calling constantly by day and night, and if in the area are unlikely to be overlooked. When an English visitor recently remarked "Don't you have any cuckoos here? I haven't heard one this spring", it had to be admitted that Australian cuckoos would be of little use to clock manufacturers. None of them say "Coock-oo". Still, the four species most commonly seen in Victoria can all be identified by their calls. The large Pallid Cuckoo has a scale-like series of notes running upwards, while the Fantail Cuckoo's trill goes down the scale. The smaller Golden Bronze Cuckoo's short repeated notes have an upward inflection like a man whistling up a dog, and the similar Horsfield Bronze Cuckoo's short whistles have a downward trend.

The subject of nest-parasitism has fascinated naturalists for many years, and heated arguments have flourished, books have been written and papers published about the extraordinary behaviour patterns now involved. Some cuckoos lay eggs which match those of the host-species, some eggs are quite differently coloured. A famous English ornithologist formed a collection of nearly six thousand cuckoo eggs in an attempt to prove, among other things, Darwin's theories of evolution. (Whatever he proved, one cannot help wondering what effect this and other large-scale egg-collections had on local cuckoo populations.) Some birds accept a cuckoo's egg; others of the same species desert the nest; others build the lining of the nest over the egg which remains unhatched. Some newly-hatched cuckoos eject all other young from the nest, but some are reared with the host's brood. The questions still to be answered are many, and perhaps the most interesting is - How did it all start?

It is accepted that the habit is a very old one. Possibly it started accidently, with a gradual reduction in the standard patterns of nest-building and feeding of the young. This is borne out by the fact that among the non-parasitic cuckoos many are poor nest-builders. Among the American Cowbirds, one species incubates its own eggs in a nest it steals, while other related species are parasitic. Various Australian birds unrelated to cuckoos occasionally renovate and use the abandoned nests of other birds. Often the solid mud nest of the Mudlark provides a good foundation.

"CUCKOOS AND THEIR KIN" (Cont'd.)

It is easy to forget that evolution is a still-continuing process. For example, we may be witnessing the gradual change to parasitism in an Australian bird, the Blue-faced Honeyeater which rarely builds its own separate nest if a suitable one is available for the taking. Will it eventually at some far-distant date have cuckoo-like habits?

And what will be the effect of the changing habits in our own society? For a number of seemingly plausible and economically sound reasons more and more people are officially encouraged to live in flats provided for them, and to leave their children in the care of others. Perhaps the future may provide some rather startling answers.

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"THE BIRD BATH"

By Oonah McHaffie, Park Orchards

Our simple home-made bird-bath has proved itself very popular with the birds, especially the smaller species.

We bought a galvanised rubbish tin lid from a hardware store and inverted it on top of a heavy drain pipe, which has a diameter of ten inches. We placed a small rock in centre of dish and this serves the dual purpose of extra-steadiness for the bath and an extra resting place for the birds.

The narrow rim of the rubbish tin lid is excellent for the smaller birds; even the tiniest thornbills perch there between "dips".

We have placed this bird-bath near a Cootamundra Wattle, and there are also some eucalypts near-by so that the birds can escape to shelter if danger threatens. Also, after playing around in the water they like the security of a tree while they preen themselves.

Birds observed enjoying the bath regularly are the grey fantail,

"THE BIRD BATH" (Cont'd.)

willy wagtail, striated thornbill, brown thornbill, little thornbill and the eastern spinebill; less frequently, the scarlet robin, the white-plumed honeyeater and white-eared honeyeater. There have been a number of birds which I have not yet been able to identify as they are casual visitors and are unknown to me, but sometimes a group can be seen perching on the rim.

At the end of March when the first scarlet robins for the season made their appearance, a male and female were perched on the rim of the bird-bath, together with several striated thornbills who were hopping in and out of the water, and a grey fantail also joined the party. The grey fantails and the striated thornbills frequently bathe together.

The bird-bath has been more successful than our attempts to put out food for the honeyeaters. We mixed up some syrup, according to the approved recipe, and put it in a covered plastic container with holes just above the liquid, also according to instructions, and attached it to a bird-feeder near a shrub. Not one bird was interested. The eastern spinebills continued to enjoy a Grevillea Poorinda Queen nearby. We decided to place the jar at the foot of the grevillea so that the birds could not possibly miss it but we were very amused to see an eastern spinebill standing on the lid in order to reach the flowers of the grevillea and still ignoring the contents of the jar. After a few weeks of renewing the food at frequent intervals we have given up for the time being.

(Editors Note: In the Junior Pages is a sketch of the type of feeder described - let us hope that others who build these have more success than Mrs. McHaffie.)

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Additional copies of the Agenda of meetings and excursions of the G.F.N.C. can be obtained from the Secretary - why not send one to friends who have not yet joined the Club?

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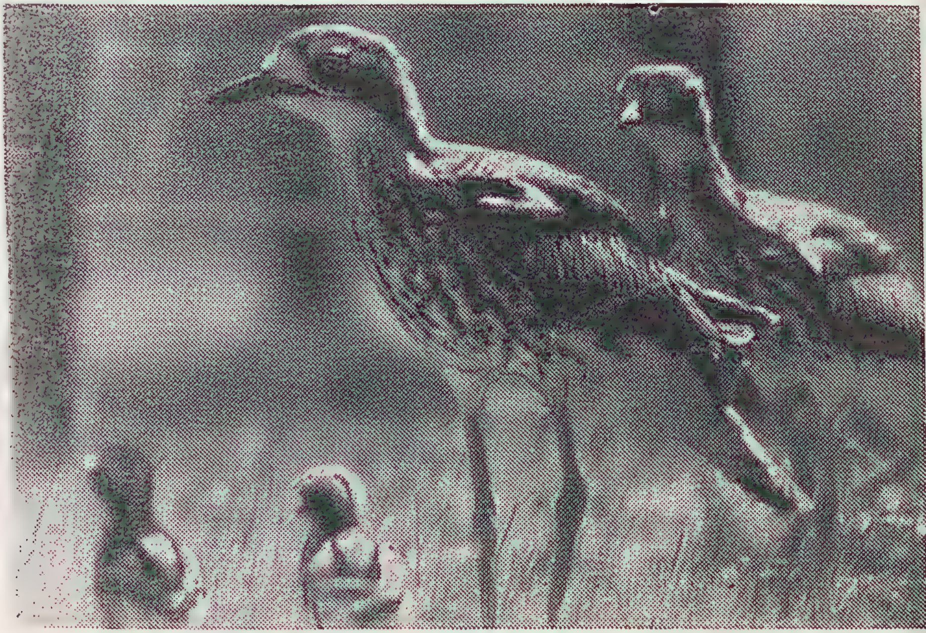
at random

"PHOTOGRAPHY OF STONE-PLOVERS": by Jack Wheeler.

Searching a patch of bushland in the Lexton district, north of Beaufort, one of our country members, Mrs. Betty Millar, and her husband found the rare nest of the Southern Stone-plover or Curlew. This was on the 19th October last. The nest contained two beautifully marked eggs. Actually, there was no nest constructed, the eggs just being deposited on the bare earth, amongst ground debris of twigs and leaves.

Watching the progress of this nesting pair, regular visits were made to the area. Early in December the chicks had hatched out. Stalking the family group, Mr. Millar was able to obtain the accompanying photograph of the whole family, without the aid of a hide. A tall blade of grass cut across this picture but when photographing such shy and retiring birds such obstacles have to be accepted.



Stone-plover and young.

Photo by Mr A. Millar.

AT RANDOM (Cont'd.)

"THE COURAGEOUS WILLY WAGTAIL": by Oonah McHaffie.

During the nesting season, we were surprised to see a willy wagtail attacking a magpie.

When first noticed the magpie was on the ground and was very bothered as the smaller bird was attacking from the rear. The magpie kept swinging round to face its tormentor but the willy wagtail was too quick for it and continued to harass it.

The magpie flew into a nearby eucalypt but was still pursued. Then we noticed it, a little way off, crouched on the ground, apparently exhausted and confused by the attack. It had its back to a bush which gave it some protection from the attack from the rear, so that at least its opponent had to face it. The willy wagtail was still hovering over the magpie, but our attention was diverted for a few moments and when we looked again the magpie had made its escape.

OCEAN GROVE NATURE RESERVE: by Jack Wheeler.

On February 21st, of this year, the Committee of Management appointed to control the Ocean Grove Nature Reserve (once known as Cuthbertsons), was legally appointed in the Government Gazette.

This Committee consisting of eleven members will now have the power to get urgent work done on the Reserve. The first job will be the completion of fencing. A complete fire-break, access track etc. are other urgent jobs.

The Committee of Management comprises - Councillors Aitken, Golightly and Guyett; Mesdames Wallace and Wood; Messrs. Lavery, Lonsdale, Pescott, Smith (M.L.A.), and Wheeler. A Lands Officer to be appointed.

"A FUNNY THING HAPPENED ON THE WAY TO THE NEST": by Oonah McHaffie.

Among the amusing sights seen during the nesting season was a sparrow wrestling with a large quilled feather from a fowl.

AT RANDOM (Cont'd.)

When first noticed the sparrow was in a shrub with feather held in its bill but as we watched, the sparrow dropped to the ground and wrestled with it there. Try as he might he could not break it up for easier transportation. He then tried to carry it away intact but, after flying low for a few yards, he dropped it. The weight was evidently too much.

As he picked it up for a further attempt, a myna spotted the prize. The sparrow, observing the rapid approach of the larger bird, either took fright or decided the weight of the feather was really too much, and abandoned it. The myna then carried the feather some way and, after dropping it once, managed to take off with it.

The sparrow was next observed removing a small piece of paper, which, no doubt, was a poor substitute for a nest lining.

AUSTRALIAN BIRDS - AID TO LISTING: by Trevor Pescott.

To assist listing of birds in certain areas, a catalogue of all birds likely to be found anywhere in Australia has been prepared, and adjacent to the names are a series of five columns. Instead of writing in a notebook date, area, bird name, and the numbers of each bird seen, it is now only a matter of filling in the relevant column.

The result is uniform, compact and tidy lists readily accessable. When complete, the lists can be retained, or sent to C.S.I.R.O. Canberra for permanent preservation.

Booklets cost $1.00 for six, plus 5¢ postage, and are available from 36 Arthur Circle, Forrest, Canberra, 2603.

These lists are of a type now becoming very popular, and they will be very useful to a Club such as ours, for the collection of bird lists made on Club excursions, something which has not previously been done systematically.

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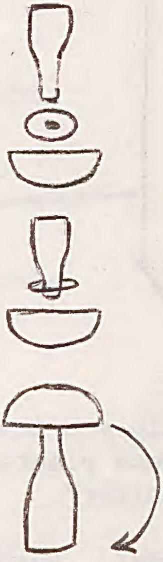
JUNIOR PAGES

This month, we do not have any letters from Juniors to print - it is a pity, for these pages are specially set aside for Juniors to have printed their observations and notes.

Below is a honeyeater feeder, quite easily built with a little help from your parents; kept filled with a honey and water mixture, it will be used by honeyeaters - once they have found it.

To make the feeder, you need an empty bottle (a cordial bottle, 26oz size is ideal), a plastic bowl (about 2" deep and 4" wide), with a lid in which has been cut a hole to fit over the neck of the bottle, a pole about 4 feet long, a square piece of wood 1/2 inch thick and 4 inches square, and a wire loop to hold the bottle against the pole. Nail the wooden square onto the pole so that it sticks out like a shelf about 1 foot from the top of the pole; the bottle is placed upside down with its neck through a hole in the lid of the dish. The dish is placed on the wood block, the bottle is wired up in place - and your feeder is nearly ready for use.

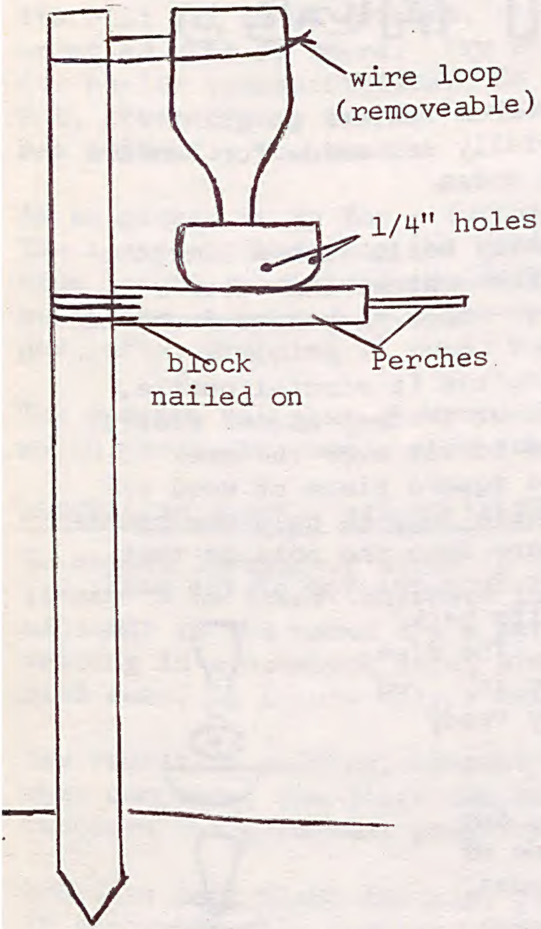


So the honeyeaters can reach the honey, cut 4 holes about 1/4 inch round in the side of the dish; perches are fixed to the wooden block to finish the feeder.

Stand the feeder near some bushes so the birds can gain shelter.

To fill - fill the bottle with a mixture of a large spoonful of honey dissolved in water; place the dish upside down over the bottle neck, then quickly turn upside down.

JUNIOR PAGES (Cont'd.)



A little experimenting will show how to fit the bottle so the honey comes just below the holes.

Remember - patience is needed, and an open bowl of honeywater placed without bottle or lid on the stand may be necessary to let the honeyeaters find it.

(If further details are needed - contact the Editor)

Orchids: In the next few months, many of our native orchids will begin to flower, and on any excursion into the bushland through the winter and spring, you should be able to find some of these beautiful little flowers hiding amongst the grass and fallen leaves.

Orchids do not look like other flowers, for their shapes are often quite strange, hardly resembling flowers at all. But each part of the flower has its own particular use, and is as necessary as are petals, stamens and other parts of ordinary flowers.

To help you learn a little more about the orchids, we will concentrate on these plants in Junior Pages in the next issue of "Geelong Naturalist".

Spiders: Autumn is the time when spiders are usually found in their biggest numbers - have you noticed any more lately?

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Visitors Welcome.

All papers submitted for publication in this journal should be sent to the Hon. Editor.

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PLEASE NOTE — New Meeting Hall
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